weights, wire springs, and temporal muscle transplants. It is considered a distinct advance in the surgical treatment of facial paralysis.

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## Operations on the Vitreous Body

UNTIL RECENTLY, surgical manipulation of the vitreous body has been avoided, but technical advances now have made new intraocular procedures possible. These include vitreous removal and vitreous membrane resection. Hence some patients with previously untreatable diseases causing vitreous opacification can now be helped. These conditions include longstanding vitreous hemorrhage (from diabetic retinopathy, trauma, bleeding disorders, hypertensive retinopathy and the like), ocular inflammatory diseases, and metabolic diseases such as primary amyloidosis. Removal of the opacified vitreous humor clears the pathway for light through the eye. If the retina is intact and the other ocular media are clear, visual function can be substantially improved.

Vitreous membrane resection has been helpful in some of the complicated forms of retinal detachment and in the management of some of the vitreous complications of cataract operations. The tractional phenomena, which are the most important aspects, can often be ameliorated by cutting and resecting the vitreous membranes or bands.

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## Optic Disc Vasculitis—A Benign but Prolonged Form of Disc Edema

A MONOCULAR condition variously called retinal vasculitis, papillophlebitis and papillary vasculitis occurs in otherwise healthy young adults. Although ophthalmoscopically it is indistinguishable from papilledema or papillitis, the intracranial pressure is normal, and vision is little affected. Extensive neurosurgical investigations have always been normal.

The chief symptoms are vague, intermittent, evanescent (minutes to hours) scotomata, often on awakening. Visual acuity is usually better than 20/30. No Marcus Gunn pupillary sign is present, and color vision is normal. Enlargement of the blind spot is the only perimetric finding. The ocular signs are confined to the posterior pole: Severe disc edema, peripapillary cotton wool spots, and dilated and tortuous veins with perivenous hemorrhages. Elevation of retinal venous pressure with normal arterial pressures (systolic and diastolic) is seen on ophthalmodynamometric examination. Delay in arterial and venous filling with leakage of dye from the disc and larger veins is noted on fluorescein angiography. Later, decompensation of the perimacular capillary bed may be seen.

Though the final visual results are almost always good, the fundus changes may take six to eighteen months to clear, leaving perivenous sheathing and dilated venules on the disc's surface as sequelae. Treatment with acetazolamide, anticoagulants, or steroids has not affected the course of this condition.

The cause is thought to be occlusion of the retinal veins, in the absence of arterial disease. This occlusion is possibly precipitated by phlebitis of the perioptic veins. The underlying cause of the vasculitis is unknown.

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## Electromyography

DURING the past 20 years, there has been great interest in ocular electromyography (EMG) by various investigators including Breinin, Jampolsky, Blodi, Huber and Scott. Jampolsky recently concluded that electromyography is not useful in the management of the usual strabismus patient, although it may be helpful to an understanding of strabismus mechanisms and in cases of frank neurologic disease. Clinically useful information can be obtained in Duane's syndrome, thyroid disease, myasthenia gravis and some of the myopathic conditions. For example, in Duane's syndrome, normal medial rectus function accompanied by abnormal lateral rectus innervation is always found. Studies involving the use of an EMG needle with multiple electrodes placed at different sites along its shaft promise to yield interesting

information concerning the activity of different fibers within an extraocular muscle. This should provide a physiologic correlate for the role of various muscle fiber types in the control of ocular position and movement (fixation, saccades, versions and vergences).

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## Management of Tear Duct Disease

EPIPHORA is an extremely annoying problem to persons of all ages. Approximately 5 percent of infants are born with one or both tear ducts blocked. In about half of these cases, the ducts will open as the child grows. When this does not happen, gentle probing through the nasal lacrimal duct into the nose will cure the vast majority of patients, although sometimes the procedure has to be repeated. It can be performed in the physician's office, but is safer if performed under anesthesia so that a false passage is not made inadvertently.

In adults the cause of epiphora must be ascertained, if possible. This is particularly important in patients with allergic disease, especially those with allergic conjunctivitis who often have persistent or intermittent tearing. The condition usually can be controlled with topical antiallergic medication. Tearing associated with infectious disease is also annoying, but generally responds to local antibiotic therapy. Mechanical obstruction of the nasolacrimal system ordinarily has to be relieved by some form of surgical procedure.

If the gentle introduction of a probe into the punctum and through the nasal lacrimal duct shows the system is patent as far as the nose and cannot be opened by the instillation of drugs, such as procaine or cocaine, then operation must be considered. There are many variations of the classical dacryocystorhinostomy procedure. In the hands of a competent surgeon, most of the techniques work. If the lower canaliculus is blocked and the upper one is open, many patients, especially older ones, can manage without too much discomfort. In younger people, particularly those interested in sports, wind may cause excessive tearing. In such cases when one or both canaliculi are blocked, the procedure of choice is the Jones operation of the conjunctivo-dacryocystorhinostomy. In these cases a pyrex tube is placed so that it extends from the conjunctival sac into the lacrimal sac with an adequate opening into the nose. There have been several modifications of this procedure, but the classical one is undoubtedly still the best. Other materials such as silicone have been substituted for pyrex, but glass absorbs water and most plastic materials repel it.

Less common causes of epiphora must always be considered. Occasionally there is a tumor of the tear sac. Dacryoadenitis is rare, whether inflammatory or due to a neoplasm. Surgical operation or radiation, or both, may be indicated in treatment of tumors located in the lacrimal system.

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